



**HOWMET
AEROSPACE**

**TORRANCE OPERATIONS
3000 W. Lomita Blvd.
Torrance, CA 90505**

CAL-STD-0274

INSTALLATION AND REMOVAL TOOL STANDARD FOR FC43[®] PANEL FASTENER

Written By:

Joshua L. Balderas
Sr. Panel Fasteners Product Engineer

Approved By:

Carl B. Jensen
Panel Fasteners Engineering Manager

Approved By:

Olaf Voigt
Torrance Operations Quality Manager

TABLE OF CONTENTS

STANDARD INSTALLATION:

PNEUMATIC FLARING TOOL WITH REUSABLE PULL STEM 3
 INSTALLATION EXAMPLE 4

OPTIONAL INSTALLATION:

MANUAL (DOUBLE HEX) FLARING TOOL WITH TORQUE CONTROL ... 5
 INSTALLATION EXAMPLE 6

REMOVAL TOOL:

MICRO – STOP DRILL WITH CUSTOM NOSE PIECE 7

STUD BOLT INSTALLATION:

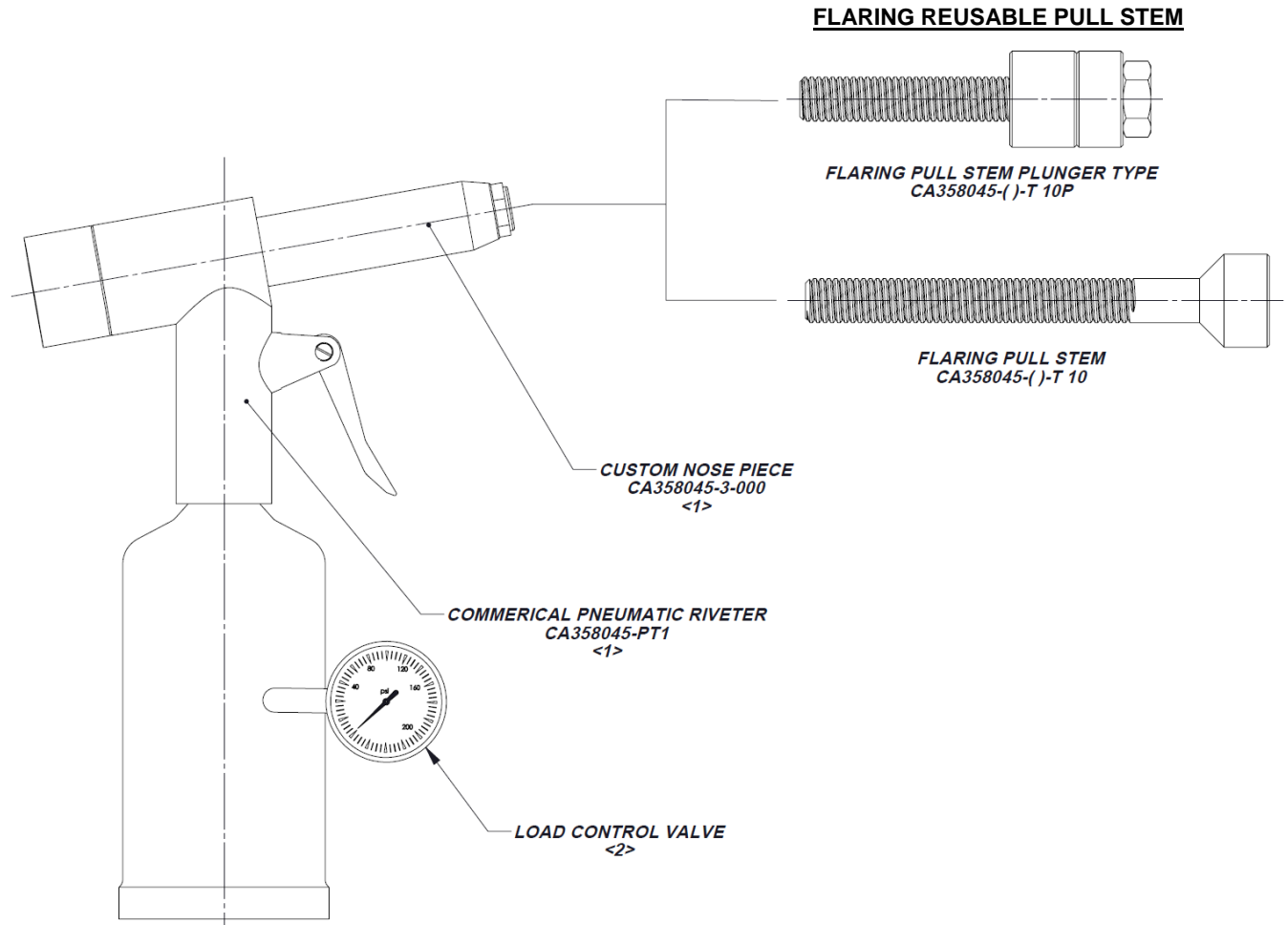
INSTALLATION EXAMPLE 8

STUD BOLT REMOVAL:

REMOVAL EXAMPLE 9

APPROVED DATE	INSTALLATION AND REMOVAL TOOL STANDARD FOR FC43® PANEL FASTENER	CAGE CODE 29372
18 SEP, 2015		 <p style="font-size: small; margin-top: 10px;">TORRANCE OPERATIONS 3000 W. LOMITA BLVD. TORRANCE, CA 90505</p> <p style="font-size: large; font-weight: bold; margin-top: 10px;">CAL-STD-0274</p> <p style="font-size: x-small; margin-top: 5px;">SHEET 2 OF 9</p>
REV. LETTER AND DATE		
"C" 1 APR, 2020 DAF NO. 118901		

STANDARD INSTALLATION PNEUMATIC FLARING TOOL WITH REUSABLE PULL STEM



NOTES; UNLESS OTHERWISE SPECIFIED:

<1> NOSE PIECE IS COMMON FOR ALL DIAMETER FC43® GROMMETS AND COMES WITH COMMERCIAL PNEUMATIC RIVETER.

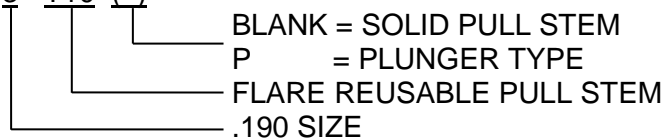
<2> PRE-SET CONTROL VALVE SETTINGS (VERIFY BEFORE USE).

- 08 SIZE = TBD
- 3 SIZE = 35-40 psi
- 4 SIZE = TBD

NOTE: PRESSURE IS SET FOR COMPOSITE PANEL INSTALLATION, PRESSURE SHOULD BE INCREASED OR DECREASED IF USING A DIFFERENT MATERIAL.

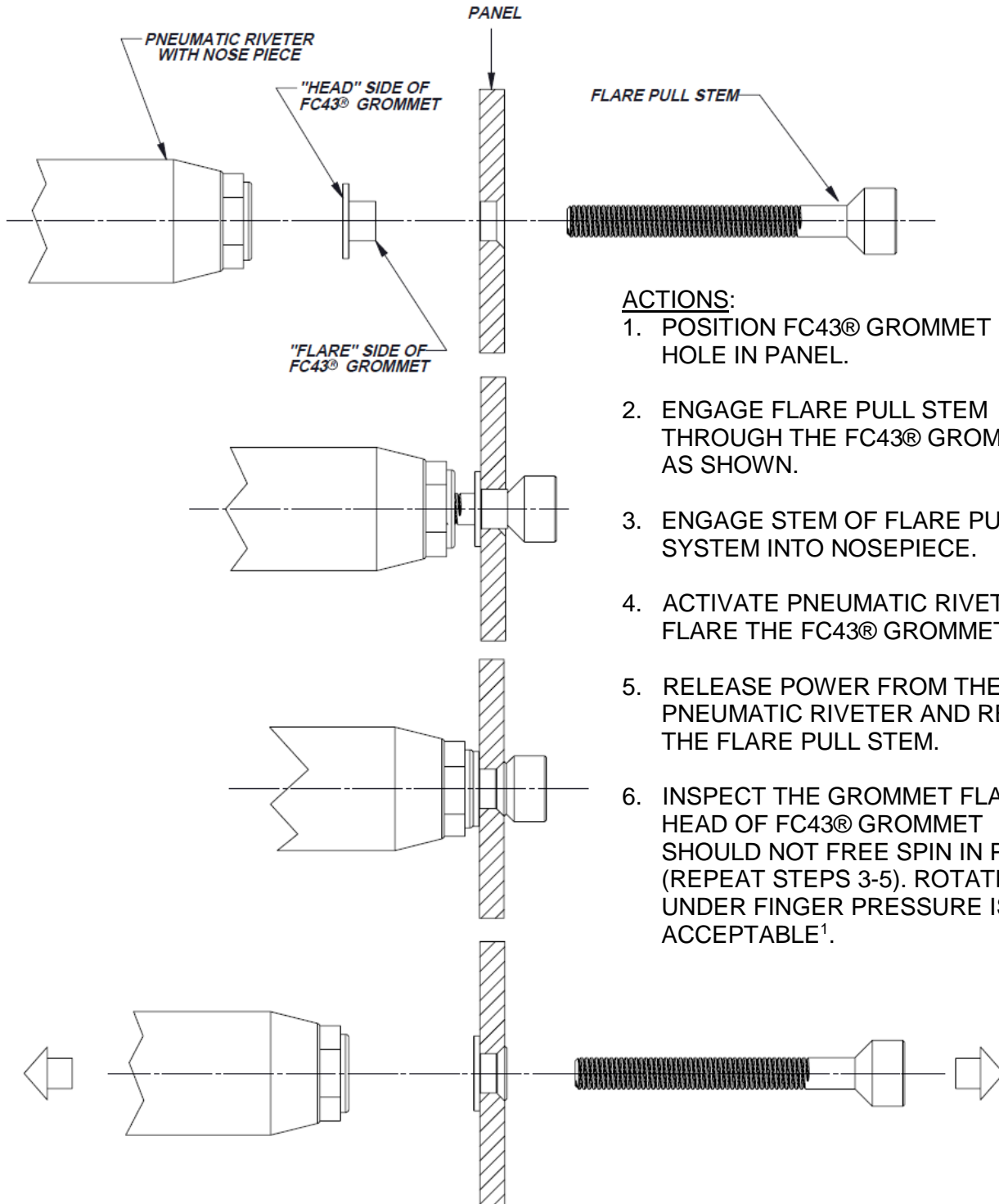
3. PART NUMBER EXAMPLE:

3.1 CA358045 - 3 - T10 ()



APPROVED DATE	INSTALLATION AND REMOVAL TOOL STANDARD FOR FC43® PANEL FASTENER	CAGE CODE 29372
18 SEP, 2015		 HOWMET AEROSPACE <small>TORRANCE OPERATIONS 3000 W. LOMITA BLVD. TORRANCE, CA 90505</small> CAL-STD-0274 <small>SHEET 3 OF 9</small>
REV. LETTER AND DATE		
"C" 1 APR. 2020 DAF NO. 118901		

INSTALLATION EXAMPLE PNEUMATIC PULLER WITH FLARE PULL STEM



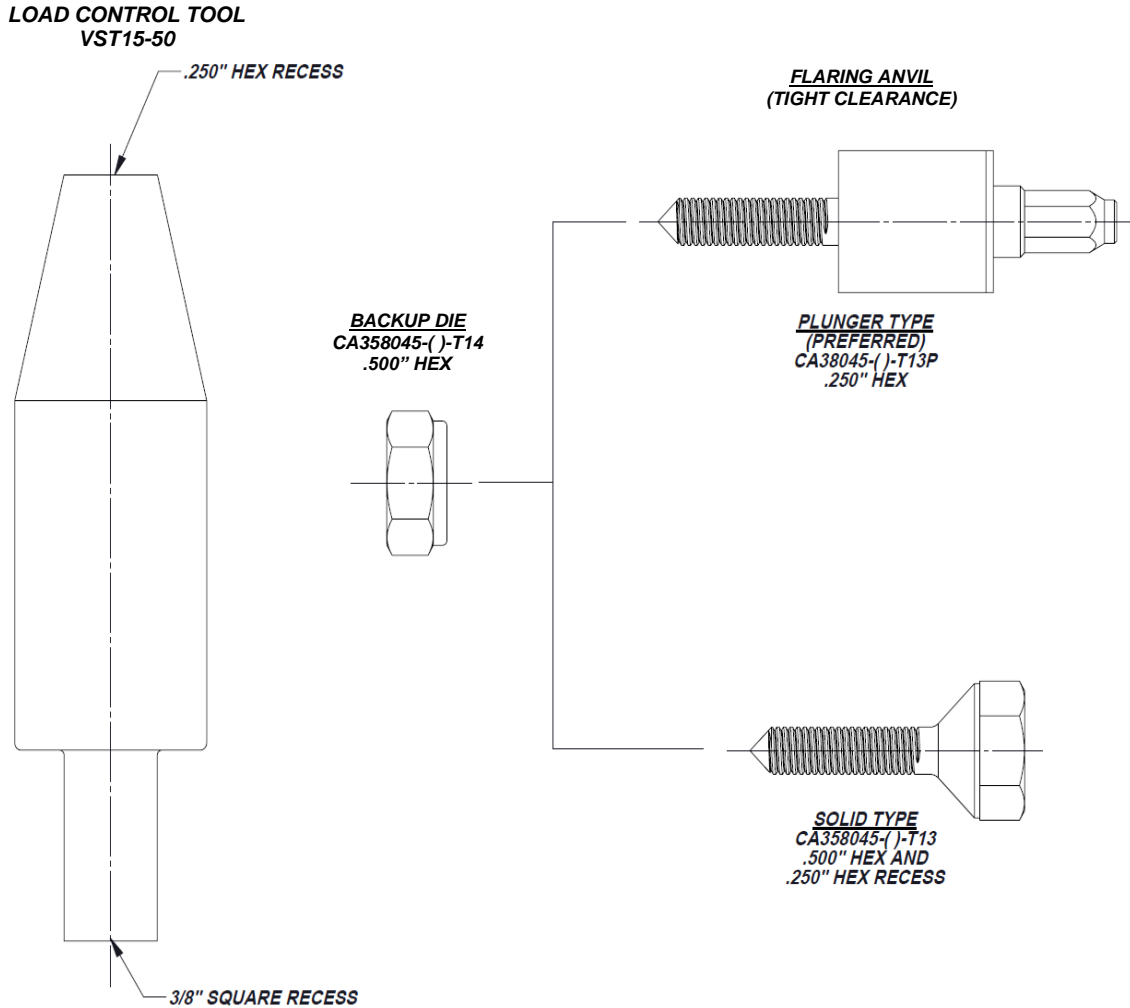
ACTIONS:

1. POSITION FC43® GROMMET INTO HOLE IN PANEL.
2. ENGAGE FLARE PULL STEM THROUGH THE FC43® GROMMET AS SHOWN.
3. ENGAGE STEM OF FLARE PULL SYSTEM INTO NOSEPIECE.
4. ACTIVATE PNEUMATIC RIVETER TO FLARE THE FC43® GROMMET.
5. RELEASE POWER FROM THE PNEUMATIC RIVETER AND REMOVE THE FLARE PULL STEM.
6. INSPECT THE GROMMET FLARE, HEAD OF FC43® GROMMET SHOULD NOT FREE SPIN IN PANEL (REPEAT STEPS 3-5). ROTATION UNDER FINGER PRESSURE IS ACCEPTABLE¹.

1. AFTER REPEATED PANEL "FLEXING", GROMMET MAY BEGIN TO SPIN. THIS IS NORMAL BUT IF NOT DESIRED REPEAT STEPS 3-5.

APPROVED DATE	INSTALLATION AND REMOVAL TOOL STANDARD FOR FC43® PANEL FASTENER	CAGE CODE 29372
18 SEP, 2015		 <small>TORRANCE OPERATIONS 3000 W. LOMITA BLVD. TORRANCE, CA 90505</small> CAL-STD-0274
REV. LETTER AND DATE		
"C" 1 APR. 2020 DAF NO. 118901		
		<small>SHEET 4 OF 9</small>

OPTIONAL INSTALLATION MANUAL (DOUBLE HEX) FLARING TOOL WITH TORQUE CONTROL



NOTES; UNLESS OTHERWISE SPECIFIED:

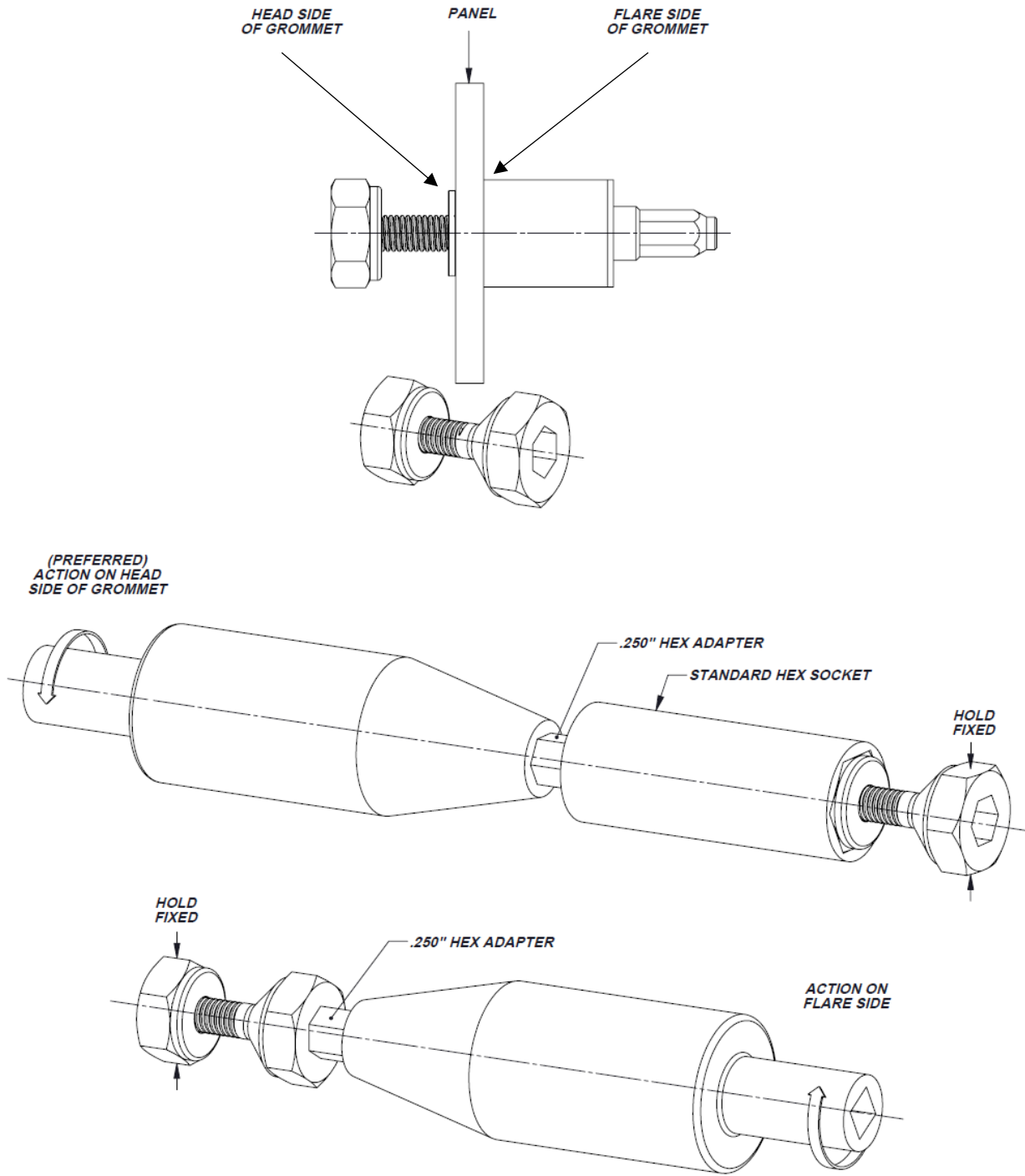
1. THE LOAD CONTROL TOOL CAN BE USED ON EITHER THE FLARING OR BACKUP DIE SIDE, ADAPTERS AND HEX SOCKETS MAY BE REQUIRED.
2. VST15-50 WILL BE PRE-SET TO 35-40 in-lbs (VERIFY BEFORE USE).
NOTE: PRESSURE IS SET FOR COMPOSITE PANEL INSTALLATION, PRESSURE SHOULD BE INCREASED OR DECREASED IF USING A DIFFERENT MATERIAL.
3. HEX AND SQUARE SIZES ARE THE SAME FOR .190 AND .250 SIZE TOOLS.

4. PART NUMBER EXAMPLE:

- 4.1 CA358045 - 3 - T13 ()
- BLANK = SOLID TYPE, FLARING ANVIL
 - P = PLUNGER TYPE, FLARING ANVIL
 - MANUAL FLARING TOOL, FLARING ANVIL
 - .190 SIZE
- 4.2 CA358045 - 3 - T14
- MANUAL FLARING TOOL, BACKUP DIE

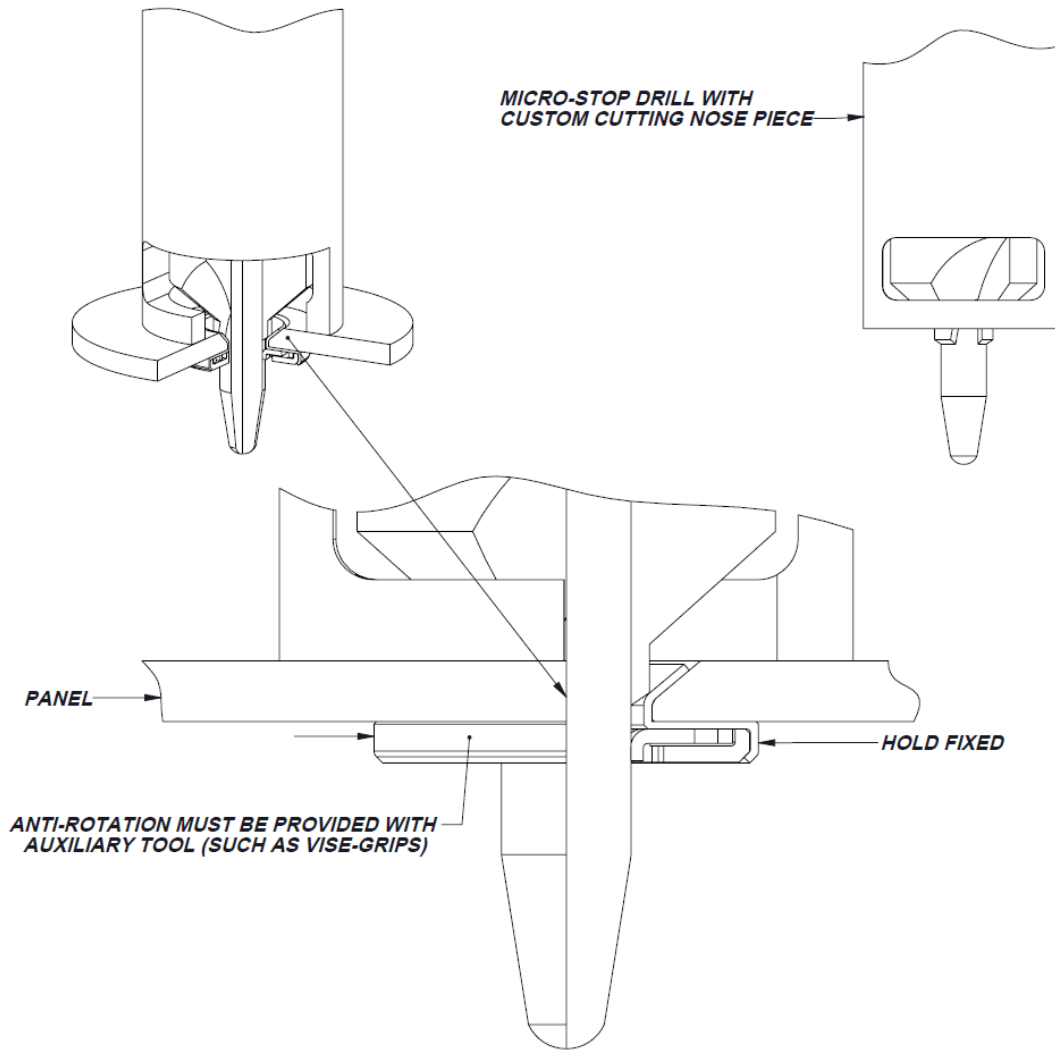
APPROVED DATE	INSTALLATION AND REMOVAL TOOL STANDARD FOR FC43® PANEL FASTENER	CAGE CODE 29372
18 SEP, 2015		HOWMET AEROSPACE <small>TORRANCE OPERATIONS 3000 W. LOMITA BLVD. TORRANCE, CA 90505</small> CAL-STD-0274 <small>SHEET 5 OF 9</small>
REV. LETTER AND DATE		
"C" 1 APR. 2020 DAF NO. 118901		

INSTALLATION EXAMPLE
MANUAL (DOUBLE HEX) FLARING TOOL WITH TORQUE CONTROL



APPROVED DATE	INSTALLATION AND REMOVAL TOOL STANDARD FOR FC43® PANEL FASTENER	CAGE CODE 29372
18 SEP, 2015		 HOWMET AEROSPACE
REV. LETTER AND DATE		
"C" 1 APR, 2020 DAF NO. 118901		CAL-STD-0274

REMOVAL TOOL
MICRO-STOP DRILL WITH CUSTOM NOSE PIECE



NOTES; UNLESS OTHERWISE SPECIFIED:

1. ATTACHES TO COMMERCIAL ELECTRIC DRILL.
2. CUTS ONLY FILLET PORTION OF FLARED GROMMET.
3. ACCURATE DEPTH CONTROL.
4. CENTER PILOT ENSURES ALIGNMENT.
5. PART NUMBER EXAMPLE:

5.1 DT358045 - 3 - 13

13 = 1300 RPM

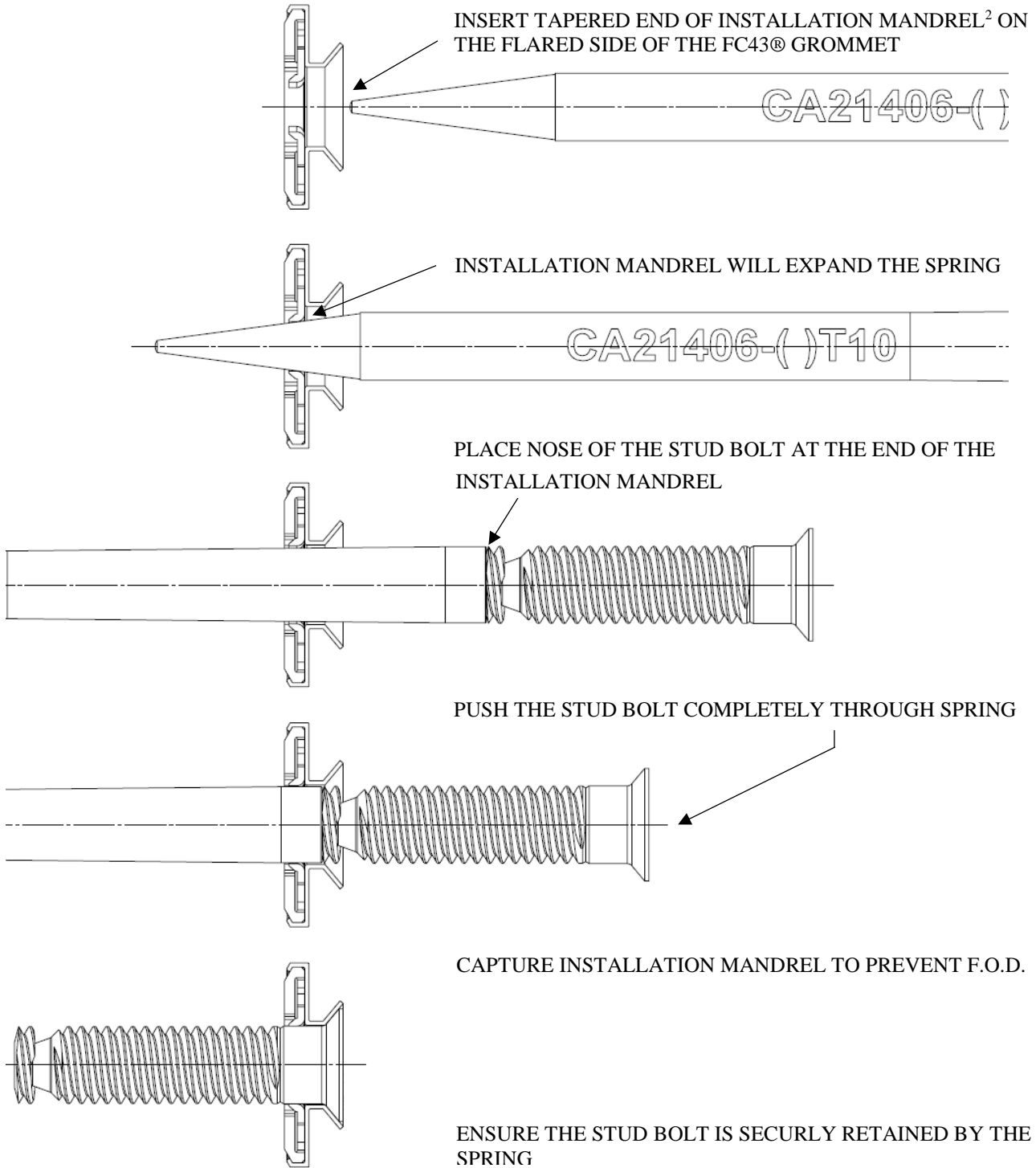
33 = 3300 RPM

.190 SIZE

GROMMET REMOVAL TOOL MICRO-STOP DRILL

APPROVED DATE	INSTALLATION AND REMOVAL TOOL STANDARD FOR FC43® PANEL FASTENER	CAGE CODE 29372
18 SEP, 2015		 TORRANCE OPERATIONS 3000 W. LOMITA BLVD. TORRANCE, CA 90505
REV. LETTER AND DATE		
"C" 1 APR, 2020 DAF NO. 118901		CAL-STD-0274 SHEET 7 OF 9

STUD BOLT INSTALLATION EXAMPLE



2. SEE SALES DRAWING CA21406-()T10, FOR SIZE DETAILS.

APPROVED DATE	INSTALLATION AND REMOVAL TOOL STANDARD FOR FC43® PANEL FASTENER	CAGE CODE 29372
18 SEP, 2015		 HOWMET AEROSPACE <small>TORRANCE OPERATIONS 3000 W. LOMITA BLVD. TORRANCE, CA 90505</small> CAL-STD-0274 <small>SHEET 8 OF 9</small>
REV. LETTER AND DATE		
"C" 1 APR. 2020 DAF NO. 118901		

STUD BOLT REMOVAL EXAMPLE

- 1) PUSH THE "HOOK" OF THE STUD BOLT BEYOND THE RETAINING RING OF THE FC43® GROMMET



- 2) USING PLUMBING TAPE, DENTAL FLOSS OR SIMILAR, BEGIN WRAPPING THE TAPE AROUND THE "HOOK" PORTION OF THE STUD BOLT



- 3) STOP WRAPPING WHEN THE "HOOK" HAS BEEN FILLED BY THE TAPE



- 4) PULL THE STUD BOLT OUT OF THE FC43® GROMMET (IF THE STUD BOLT DOES NOT COME OUT, CONTINUE WRAPPING THE TAPE AROUND THE "HOOK")



- 5) ONCE THE STUD BOLT IS REMOVED FROM THE PANEL, UNWRAP THE TAPE AND DISCARD



APPROVED DATE	INSTALLATION AND REMOVAL TOOL STANDARD FOR FC43® PANEL FASTENER	CAGE CODE 29372
18 SEP, 2015		 HOWMET AEROSPACE <small>TORRANCE OPERATIONS 3000 W. LOMITA BLVD. TORRANCE, CA 90505</small> CAL-STD-0274 <small>SHEET 9 OF 9</small>
REV. LETTER AND DATE		
"C" 1 APR, 2020 DAF NO. 118901		